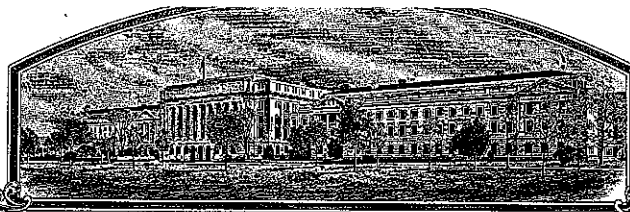


No.

9900224



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nobartis Seeds, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE PURPOSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'S80-J2'



In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this ninth day of February, in the year of our Lord two thousand one.

Attest:

Alan R. Post

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[Signature]
Secretary

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

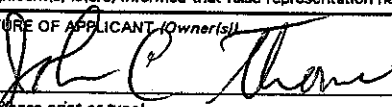
1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Novartis Seeds, Inc.		X9780, B223784	S80-J2
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9900224
P.O. Box 959 Minneapolis, MN 55440		612-593-7333	
7. GENUS AND SPECIES NAME		6. FAX (include area code)	F I L I N G DATE
Glycine max		612-593-7801	3-5-99
8. FAMILY NAME (Botanical)		FILING AND EXAMINATION FEE:	
Leguminosae		F E E S \$ 2450.00	
9. CROP KIND NAME (Common name)		DATE 11/16/98 35-99	
Soybean		CERTIFICATION FEE:	
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)		F E E S \$ 320.00	
Corporation		DATE 10/31/00	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Delaware		1976	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
John C. Thorne Novartis Seeds, Inc. P.O. Box 949 Washington, Iowa 52353			319-653-2181
			15. FAX (include area code)
			319-653-4609
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input type="checkbox"/> Exhibit D. Additional Description of the Variety (Optional) e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,600 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in an approved public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
			
NAME (Please print or type)		NAME (Please print or type)	
John C. Thorne			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director, Soybean Breeding	11-03-98		

EXHIBIT A**Origin and Breeding History of S80-J2**

In the summer of 1989 the Novartis Seeds, Inc. (formerly Northrup King Co.) breeding group at Bay, AR made the cross 'A6297 x H6686' from which the variety S80-J2 is derived.

The F1 was advanced to F2 in the field at Bay during the summer of 1990; there were two purple flowered F1 plants which were harvested in bulk. The F2 and F3 generations were advanced during two consecutive plantings in Hawaii, during the winter of 1990/91 using a modified system of single seed descent. The F4 population was grown in the field at Bay during the summer of 1991, and single plants were harvested. These were screened with race 3 of cyst nematode (*Heterodera glycines*), during the winter of 1991/92, and resistant plants were grown as F5 progeny rows in the field during the summer of 1992. One row, #23,784 was selected, harvested in bulk, and designated as B223784. From 1993-94, B223784 was tested in yield trials at locations throughout the mid-south and southeastern United States. During this period the line was characterized as possessing white flowers, tawny pubescence, tan pod walls, and seed with shiny seed coats and black hila. It was further established that B223784 was susceptible to *Phytophthora* rot, but tolerant under field conditions, and resistant to stem canker caused by *Diaporthe phaseolorum* var. *meridionalis*. B223784 was further evaluated in advanced trials from 1994-97, across a wide range of environments. During 1997 it was tested under the experimental designation X9780, and based on its yield superiority and disease resistance, it was released in 1998 as S80-J2.

During the winter of 1994-95, 400 seeds of S80-J2 were planted as two progeny rows in Hawaii. Following a thorough roguing for flower and pubescence color, 200 single plants were harvested, threshed individually, and their progeny returned to Bay for planting in single rows during the summer of 1995. This increase was rogued carefully at flowering and maturity to remove any rows which showed segregation or off-type plants. The remaining rows were then bulk harvested to produce Pre-breeder seed. The seed was planted near Bay, AR in 1996 to produce Breeder seed. This increase was rogued carefully at flowering and maturity and found to be uniform.

Foundation seed of S80-J2 was produced and approved by the Arkansas State Plant Board in 1997. Varietal purity will be maintained through routine roguing or by further use of progeny rows as required.

S80-J2 is a uniform, stable variety except that it may contain certain fewer than 1% plants with purple flowers, gray pubescence, or seeds of another hilum color. During the four years of testing and three years of seed increase, we have observed no other off-types except for minor environmentally induced variation in the intensity of hilum pigmentation.

Novelty Statement for the Variety S80-J2

Soybean variety S80-J2 is most like the variety 6738. It can be differentiated from 6738 on the basis of flower color and resistance to frogeye leafspot disease caused by *Cercospora sojina*. S80-J2 has white flowers and is resistant to frogeye leafspot, whereas 6738 has purple flowers and is susceptible to frogeye leafspot.

U.S. DEPARTMENT OF AGRICULTURE
 AGRICULTURAL MARKETING SERVICE
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION
 PLANT VARIETY PROTECTION OFFICE
 BELTSVILLE, MARYLAND 20705

EXHIBIT C
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Novartis Seeds, Inc.	TEMPORARY DESIGNATION X9780, B223784	VARIETY NAME S80-J2
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) P O Box 949 Washington, IA 52353-0949 Attn.: John Thorne		FOR OFFICIAL USE ONLY PVPO NUMBER 9900224

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,).

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = ≤ 1.2)
 3 = Elongate (L/T ratio > 1.2 ; T/W = ≤ 1.2)

2 = Spherical Flattened (L/W ratio > 1.2 ; L/T ratio = ≤ 1.2)
 4 = Elongate Flattened (L/T ratio > 1.2 ; T/W > 1.2)

2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) _____

6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1^a)2 = Type B (SP1^b)

9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) _____

9900224

11. LEAFLET SIZE:

2

1 = Small ('Amsoy 71'; 'A5312')
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

12. LEAF COLOR:

2

1 = Light Green ('Weber'; 'York')
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

13. FLOWER COLOR:

1

1 = White

2 = Purple

3 = White with purple throat

14. POD COLOR:

1

1 = Tan

2 = Brown

3 = Black

15. PLANT PUBESCENCE COLOR:

2

1 = Gray

2 = Brown (Tawny)

16. PLANT TYPES:

2

1 = Slender ('Essex'; 'Amsoy 71')
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

17. PLANT HABIT:

1

1 = Determinate ('Gnome'; 'Braxton')
3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

2 = Semi-Determinate ('Will')

18. MATURITY GROUP:

11

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

2

Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)

0

Bacterial Blight (*Pseudomonas glycinea*)

2

Wildfire (*Pseudomonas tabaci*)

FUNGAL DISEASES:

1

Brown Spot (*Septoria glycines*)

Frogeye Leaf Spot (*Cercospora sojina*)

0

Race 1

0

Race 2

0

Race 3

0

Race 4

0

Race 5

2

Other (Specify)
Common isolates

0

Target Spot (*Corynespora cassicola*)

0

Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)

0

Powdery Mildew (*Microsphaera diffusa*)

0

Brown Stem Rot (*Cephalosporium gregatum*)

2

Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

9900224

☐ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)

☐ 1 Purple Seed Stain (*Cercospora kikuchii*)

☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)

Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)

☐ 1 Race 1 ☐ 1 Race 2 ☐ 1 Race 3 ☐ 1 Race 4 ☐ 0 Race 5 ☐ 0 Race 6 ☐ 1 Race 7

☐ 0 Race 8 ☐ 0 Race 9 ☐ 0 Other (Specify) _____

VIRAL DISEASES:

☐ 0 Bud Blight (Tobacco Ringspot Virus)

☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)

☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)

☐ 0 Pod Mottle (Bean Pod Mottle Virus)

☐ 0 Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode (*Heterodera glycines*)

☐ 1 Race 1 ☐ 1 Race 2 ☐ 2 Race 3 ☐ 0 Race 4 ☐ 1 Other (Specify) 14 _____

☐ 0 Lance Nematode (*Hoplolaimus Colombus*)

☐ 1 Southern Root Knot Nematode (*Meloidogyne incognita*)

☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)

☐ 1 Peanut Root Knot Nematode (*Meloidogyne arenaria*)

☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)

☐ 0 OTHER DISEASE NOT ON FORM (Specify): _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 1 Iron Chlorosis on Calcareous Soil

☐ 0 Other (Specify) _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)

☐ 0 Potato Leaf Hopper (*Empoasca fabae*)

☐ 0 Other (Specify) _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	HARTZ 6686	Seed Coat Luster	6738
Leaf Shape	6738	Seed Size	HARTZ 6686
Leaf Color	HARTZ 6686	Seed Shape	HARTZ 6686
Leaf Size	A 6297	Seedling Pigmentation	A 6297

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

9900224

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
Submitted S80-J2	175	2.9	75	6.7	14.4	35.6	18.0	18.0	2 - 3
S83-30 Name of Similar Variety	179	3.5	77	6.4	12.4	36.2	17.5	14.0	2 - 3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A₂ in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

